

What is claimed is:

1. An exterior panel comprising:
 - a) an exposed surface;
 - b) an unexposed surface; and
 - c) an effective amount of algaecide provided on said unexposed surface to inhibit algae growth on a second exposed surface provided on a second adjacent panel.
2. The exterior panel of claim 1, wherein said exterior panel comprises a butt end, wherein said algaecide is provided on said unexposed surface of said butt end.
3. The exterior panel claim 2, wherein said algaecide is provided on the lower 12 mm to 51 mm of the butt end.
4. The exterior panel of claim 1, wherein the unexposed surface is installed adjacent to the exposed surface of the second exterior panel.
5. The exterior panel of claim 1, wherein said algaecide is selected from the group consisting of copper, copper compounds, zinc, zinc compounds, chromium, chromium compounds, tin compounds, organic biocides, silver-containing zeolites and combinations thereof.
6. The exterior panel of claim 1, wherein said algaecide is applied in an amount of about 0.1 to about 2.5 gram per square foot.
7. The exterior panel of claim 6, wherein said algaecide is applied in an amount of about 0.5 to about 2.5 gram per square foot.
8. The exterior panel of claim 7, wherein said algaecide is applied in an amount of about 0.1 to about 1.0 gram per square foot.
9. The exterior panel of claim 1, wherein said algaecide comprises silver-containing zeolites.
10. The exterior panel of claim 9, wherein said algaecide is applied in an effective amount to inhibit algae growth.
11. The exterior panel of claim 9, wherein said algaecide comprises a powder.
12. The exterior panel of claim 11, wherein said algaecide is applied in an amount of about 0.1 to 1.0 gram per square foot.
13. The exterior panel of claim 12, wherein said algaecide is applied in an amount of about 0.1 gram per square foot.

14. The exterior panel of claim 1, wherein said exterior panel is a roofing product.
15. The exterior panel of 14, wherein said exterior panel is an asphalt shingle.
16. The exterior panel of claim 1, wherein said exterior panel is a clay tile.
17. The exterior panel of claim 1, wherein said exterior panel is manufactured from a cementitious material.
18. The exterior panel of claim 1, wherein said exterior panel is a glass fiber reinforced polymeric member.
19. The exterior panel of claim 1, wherein said exterior panel is siding.
20. The exterior panel of claim 1, further comprising said exposed surface having no substantial amount of algaecide provided thereon.
21. A process of applying algaecide to an exterior panel comprising the steps of:
- a) providing a first exterior panel with an exposed side and an unexposed side;
 - b) applying an algaecide to said unexposed side in an amount effective to prevent algae growth on an exposed side of a second adjacent panel.
22. The process of claim 21, wherein no significant amount of said algaecide is applied to said exposed side of said first exterior panel.
23. The process of claim 21, wherein said algaecide is applied by spraying said algaecide on said exterior panel.
24. The process of claim 21, wherein said algaecide is applied by providing said algaecide in a paint and applying said paint to said exterior panel.
25. The process of claim 21, wherein said algaecide is applied by adhering an algaecidal film on said exterior panel.
26. The process of claim 21, wherein said algaecide is selected from the group consisting of copper, copper compounds, zinc, zinc compounds, chromium, chromium compounds, tin compounds, organic biocides, silver-containing zeolites and combinations thereof.
27. A method for preventing algae growth on exterior panels comprising the steps of:
- a) providing a first exterior panel with an exposed and an unexposed surface;
 - b) providing a second exterior panel with an exposed and unexposed surface;
 - c) providing algaecide on the unexposed surface of said second exterior panel;

- d) securing said first exterior panel to a building structure;
- e) securing a second exterior panel adjacent to said first exterior panel so that the unexposed surface of said second exterior panel is in an abutting position to said exposed surface of said first exterior panel; and
- f) providing moisture on said exterior panels, said moisture transporting said algaecide from the unexposed surface of said second exterior panel to said exposed surface of said first exterior panel.

28. The method of claim 27, wherein said algaecide is selected from the group consisting of copper, copper compounds, zinc, zinc compounds, chromium, chromium compounds, tin compounds, organic biocides, silver-containing zeolites and combinations thereof.

29. The method of claim 28, wherein said algaecide provided on the unexposed surface is applied in an amount effective to inhibit algae growth on said exposed surface of said first panel.

30. The method of claim 28, wherein said second exterior panel comprises a butt end, wherein said algaecide is provided on said unexposed surface of said butt end.

31. The method of claim 30, wherein said algaecide is provided on the lower 12 mm to 51 mm of the butt end.

32. The method of claim 27, wherein said moisture comprises water.

33. The exterior panel claim 27, wherein said first exterior panel and said second exterior panel are asphalt shingles.

34. The exterior panel of claim 27, wherein said first exterior panel and said second exterior panel are clay tiles.

35. The exterior panel of claim 27, wherein said first exterior panel and said second exterior panel are cement members.

36. The exterior panel of claim 27, wherein said first exterior panel and said second exterior panel are glass fiber reinforced polymeric members.

37. A method of making an algae-resistant shingle comprising the steps of:
- a) providing an asphaltic strip with an exposed surface and an unexposed surface;
 - b) providing a tacky surface on said unexposed surface; and
 - c) adhering particles with algaecidal properties to said unexposed surface.

38. The method of claim 37, wherein said tacky surface is liquid asphalt.

2002-01-24

The first part of the paper is devoted to the study of the asymptotic behavior of the solutions of the system (1.1) as $\epsilon \rightarrow 0$. In the second part, we study the asymptotic behavior of the solutions of the system (1.1) as $\epsilon \rightarrow 0$. In the third part, we study the asymptotic behavior of the solutions of the system (1.1) as $\epsilon \rightarrow 0$.